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| L2 AND (graphical ADJ representation) | 18 |

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- US OCR Full-Text Database
- EPO Abstracts Database
- JPO Abstracts Database
- Derwent World Patents Index
- IBM Technical Disclosure Bulletins

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| <u>L3</u> | L2 AND (graphical ADJ representation) | | 18 | <u>L3</u> |
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| <u>L1</u> | 717/100,109,113.ccls. OR 715/513,514,530,700,713,798,800,853,967.ccls. | | 3011 | <u>L1</u> |

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1. Document ID: US 6823495 B1

L3: Entry 1 of 18

File: USPT

Nov 23, 2004

US-PAT-NO: 6823495

DOCUMENT-IDENTIFIER: US 6823495 B1

TITLE: Mapping tool graphical user interface

DATE-ISSUED: November 23, 2004

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|----------|-------|----------|---------|
| Vedula; Nagender P. | Bothell | WA | | |
| Bhandarkar; Aditya G. | Bellevue | WA | | |
| Shukla; Dharma K. | Bellevue | WA | | |
| Taylor; William R. | Kirkland | WA | | |

US-CL-CURRENT: 715/805; 715/763, 715/810, 715/853, 717/109, 717/125, 719/329

ABSTRACT:

A graphical user interface and method for creating a mapping between a source object and a destination or target object are provided. The user interface includes a source screen region which displays a graphical representation of a source object, a target screen region which displays a graphical representation of a target object, and a mapping screen region which allows a user to create a mapping between the graphical representation of the source object and the graphical representation of the target object using graphical mapping indicia. The methodology includes displaying a graphical representation of a source object in a source screen region, displaying a graphical representation of a target object in a target screen region, creating a mapping between the graphical representation of the source object and the graphical representation of the target object in a mapping screen region using graphical mapping indicia, and displaying the mapping in the mapping screen region. The source and target objects may be schemas, spreadsheets, documents, databases, or other information sources, and the graphical mapping indicia may include link indicia and/or function objects linking nodes in the target object with nodes in the source object. The mapping may be compiled into code used by a runtime engine to translate source documents into target documents.

47 Claims, 36 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 35

| | | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KOMC | Drawn D |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|

2. Document ID: US 6795098 B1

L3: Entry 2 of 18

File: USPT

Sep 21, 2004

US-PAT-NO: 6795098

DOCUMENT-IDENTIFIER: US 6795098 B1

TITLE: Method and apparatus for bringing together separately created information blocks into a single information block for creating multiple hierarchies

DATE-ISSUED: September 21, 2004

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------|-----------|-------|----------|---------|
| Emrani; Ramin | Brentwood | CA | | |

US-CL-CURRENT: 715/764, 715/765, 715/781, 715/806, 715/853

ABSTRACT:

A method for converting a document which contains words and images which is intended to convey information in a traditional, linear format into a document or display in which the words and images are rearranged so that the result is laid out in a pictorial representation which makes it much easier for a person using the document to understand its content. To create the easier to understand pictorial/graphical representation, a document, in its original format, is stored so that it can be accessed by a user using a personal computer or work station. A user accesses the document in its original format, selects portions of the document, and each selected portion is assigned a category for subsequent processing. The categories which may be assigned are selected from among the following: i) structural, ii) functional, iii) procedural, iv) time based, and v) event based. Additional categories may be added as a function of the desired end result and specific sub-parts or diagrams. Once the categories have been assigned to selected portions of the document, a new document is created which displays the information in the original document in a much easier to understand pictorial/graphical representation.

5 Claims, 62 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 62

| | | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KOMC | Drawn D |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|

3. Document ID: US 6768500 B1

L3: Entry 3 of 18

File: USPT

Jul 27, 2004

US-PAT-NO: 6768500

DOCUMENT-IDENTIFIER: US 6768500 B1

TITLE: Method and apparatus for converting image files into hierarchical charts as a learning aid

DATE-ISSUED: July 27, 2004

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------|-----------|-------|----------|---------|
| Emrani; Ramin | Brentwood | CA | | |

US-CL-CURRENT: 715/730; 715/762, 715/764, 715/765, 715/853

ABSTRACT:

A method for converting a document which contains words and images which is intended to convey information in a traditional, linear format into a document or display in which the words and images are rearranged so that the result is laid out in a pictorial representation which makes it much easier for a person using the document to understand its content. To create the easier to understand pictorial/graphical representation, a document, in its original format, is stored so that it can be accessed by a user using a personal computer or work station. A user accesses the document in its original format, selects portions of the document, and each selected portion is assigned a category for subsequent processing. The categories which may be assigned are selected from among the following: i) structural, ii) functional, iii) procedural, iv) time based, and v) event based. Additional categories may be added as a function of the desired end result and specific sub-parts or diagrams. Once the categories have been assigned to selected portions of the document, a new document is created which displays the information in the original document in a much easier to understand pictorial/graphical representation.

5 Claims, 62 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 62

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequenced](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Draw. D](#)

4. Document ID: US 6754885 B1

L3: Entry 4 of 18

File: USPT

Jun 22, 2004

US-PAT-NO: 6754885

DOCUMENT-IDENTIFIER: US 6754885 B1

TITLE: Methods and apparatus for controlling object appearance in a process control configuration system

DATE-ISSUED: June 22, 2004

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------|--------------|-------|----------|---------|
| Dardinski; Steven | Westford | MA | | |
| Eldridge; Keith | North Easton | MA | | |
| Hall; Robert | South Easton | MA | | |

| | | |
|----------------|-----------------|----|
| Johnson; Mark | North Attleboro | MA |
| MacKay; Brian | Coppell | TX |
| Meskonis; Paul | Norwood | MA |
| Volk; Scott | North Easton | MA |

US-CL-CURRENT: 717/113

ABSTRACT:

The invention provides improved apparatus for configuring process, environmental, industrial and other control systems. Such apparatus employs "appearance" objects (or other data and/or programming constructs) defining the appearance of configurable system components in graphical editors or other views in which the components may be depicted. "Placeholder" objects (or other constructs) persist the location, size, color, or other aspects of appearance defined by an appearance object for a configurable component in views in which it is actually depicted. By way of example, a process control configuration apparatus according to this aspect of the invention uses "configurable" objects to define blocks, loops and other components of a process control system. Appearance objects provide (or reference) icons or representations indicating how the configurable objects are to be depicted, e.g., in a configuration editor. Placeholder objects are created for each configurable object that is placed in a configuration using that editor. The placeholder objects identify the sizes, locations, colors, etc., of the icons used in the editor to represent the configurable objects.

70 Claims, 121 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 75

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequentials](#) | [Attachments](#) | [Claims](#) | [KOMC](#) | [Drawn D.](#)

5. Document ID: US 6642946 B1

L3: Entry 5 of 18

File: USPT

Nov 4, 2003

US-PAT-NO: 6642946

DOCUMENT-IDENTIFIER: US 6642946 B1

TITLE: Livestock inventory and materials system with interactive graphical user interface

DATE-ISSUED: November 4, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------------|-----------------|-------|----------|---------|
| Janes; Lori A. | College Station | TX | | |
| Miller, III; William C. | College Station | TX | | |
| Davidson; Alan R. | Bryan | TX | | |

US-CL-CURRENT: 715/854; 715/769, 715/841, 715/853, 715/962

ABSTRACT:

A livestock and material inventory system having a database storing inventory data, at least one data explorer operable to access predetermined portions of data in the database, and a graphical user interface operable to display data accessed by the at least one data explorer to a user is provided. The graphical user interface includes a first window operable to display a hierarchical tree structure representation of the inventory data, and a second window operable to display a data summary associated with a selected node in the hierarchical tree structure.

89 Claims, 22 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 16

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn D](#)

6. Document ID: US 6636250 B1

L3: Entry 6 of 18

File: USPT

Oct 21, 2003

US-PAT-NO: 6636250

DOCUMENT-IDENTIFIER: US 6636250 B1

TITLE: Methods and apparatus for presenting information to a user of a computer system

DATE-ISSUED: October 21, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|----------------|-----------|-------|----------|---------|
| Gasser; Morrie | Hopkinton | MA | 01748 | |

US-CL-CURRENT: 715/853; 715/733

ABSTRACT:

The invention provides a graphical user interface which can use a hierarchical form or style of presentation to depict and display hierarchical and non-hierarchical relationships and objects. In one configuration, the system of the invention displays icons on a graphical user interface on a display of a computer system and receives a user selection of an icon and receives a relationship selection selected by the user that corresponds to the icon selected by the user. The system then performs a relationship function identified by the relationship selection selected by the user. The relationship function is performed upon a descriptor in the memory system that is related, according to the relationship selection, to the icon selected by the user. The relationship function produces a display result that can convey the relationship selection made by the user and that includes an arrangement icon that conveys at least one newly displayed relationship within the graphical user interface and that relates to the icon selected by the user. The system then displays a representation of the display result in the graphical user interface on the display. The system allows a single entity represented by an icon to be displayed in multiple places on the same display of a computer system. Also, certain relationship functions can be used to condense the view of a large number of icons into a shorter sub-list of icons. This provides a more concise view for the user and allows more relationship information to be displayed in a smaller

display area.

48 Claims, 13 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 13

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Specifications](#) | [Claims](#) | [KINIC](#) | [Drawn D](#)

7. Document ID: US 6606105 B1

L3: Entry 7 of 18

File: USPT

Aug 12, 2003

US-PAT-NO: 6606105

DOCUMENT-IDENTIFIER: US 6606105 B1

TITLE: Layer enhancements in digital illustration system

DATE-ISSUED: August 12, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|----------------|-------|----------|---------|
| Quartetti; Chris | East Palo Alto | CA | | |

US-CL-CURRENT: [715/853](#); [715/502](#), [715/517](#), [715/810](#), [715/835](#), [715/838](#), [715/841](#)

ABSTRACT:

Methods and apparatus, including computer program apparatus, implementing techniques for displaying information to a user of a system for editing documents containing digital artwork objects and for creating and editing such documents. The techniques include receiving a document containing a hierarchy of digital artwork elements; displaying the hierarchy to a user in a graphical representation including representations of elements; and displaying a corresponding thumbnail image with each of the displayed representations. Particular implementations include changing the displayed thumbnails as the corresponding artwork is edited so that the appearance of the thumbnails is synchronized with the appearance of the artwork. In another aspect, the techniques include implementing a capability to nest layers with layers. In another aspect, the techniques include implementing a release to layers command that expands an aggregation of artwork objects into separate editable objects and places each such separate object into a corresponding new layer in a graphics document. In particular implementations, the aggregation can be a blend, a scatter brush path, a container object, or a layer. The user can select the aggregation by selecting a row in a layers palette. In another aspect, the techniques include implementing a capability to drag and drop a group from a representation of the hierarchy to another position in the hierarchy and redefining the hierarchy according to the drag and drop.

39 Claims, 21 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 7

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Specifications](#) | [Claims](#) | [KINIC](#) | [Drawn D](#)

☒ 8. Document ID: US 6377281 B1

L3: Entry 8 of 18

File: USPT

Apr 23, 2002

US-PAT-NO: 6377281

DOCUMENT-IDENTIFIER: US 6377281 B1

TITLE: Live performance control of computer graphic characters

DATE-ISSUED: April 23, 2002

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|--------------------|----------------|-------|----------|---------|
| Rosenbluth; Steven | Burbank | CA | | |
| Forbes; Jeffrey S. | Valencia | CA | | |
| Magill; Timothy | St. Petersburg | FL | | |

US-CL-CURRENT: 715/700; 345/473, 715/500.1, 715/706

ABSTRACT:

A method and apparatus are provided for performing a computer graphic character live in a manner homologous to a live puppetry performance. Character representation information is created and stored using a first computer. Performer movement information is received at the first computer from a manual input device that receives live manual manipulations and converts the manipulations into the performer movement information. Character motion information is created and stored based on combining the performer movement information with the character representation information. The character motion information is communicated in real time to a second computer. The second computer converts the character motion information into movements of a computer graphic character, which is displayed substantially synchronized to the live manual manipulations. Control objects define elements of the manual input device. Actuators define movable elements of the computer graphic character. Expression objects tie controls to actuators and may be used to develop and store complex character expressions. The system may also drive robotic or electromechanically actuated puppet creatures.

28 Claims, 18 Drawing figures

Exemplary Claim Number: 13

Number of Drawing Sheets: 18

| | | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|----------|--------|--------|------|---------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Searcher | Editor | Claims | KMNC | Drawn D |
|------|-------|----------|-------|--------|----------------|------|-----------|----------|--------|--------|------|---------|

☒ 9. Document ID: US 6304259 B1

L3: Entry 9 of 18

File: USPT

Oct 16, 2001

US-PAT-NO: 6304259

DOCUMENT-IDENTIFIER: US 6304259 B1

TITLE: Computer system, method and user interface components for abstracting and

accessing a body of knowledge

DATE-ISSUED: October 16, 2001

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------------------|-----------|-------|----------|---------|
| DeStefano; George Francis | Rochester | MN | | |

US-CL-CURRENT: 715/805; 706/50, 706/55, 707/101, 715/764, 715/967, 715/968

ABSTRACT:

A computer system and method implement a number of unique user interface mechanisms to visually link information presented to a user and thereby facilitate user comprehension of the contextual relationship of such information. Information may be visually linked by displaying a connector element that extends between first and second windows displayed on a computer display. In addition, information may be visually linked by applying one or more filter criteria to information elements and displaying the results. For example, first and second filter criteria may be applied to a plurality of information elements, with at least portions of the resulting sets of filtered information elements displayed concurrently. As another example, a filter criteria may be applied to an information element, with the filtered and unfiltered representations of the information element displayed concurrently. Information may also be visually linked through a coordinated scrolling relationship where portions of first and second sets of filtered information elements are concurrently displayed in separate windows, with the displayed portions in each window tracked with one another to display a particular location in a body of knowledge. Also, information may be visually linked by highlighting one of a pair of information element representations in response to selection of the other information element representation when such information element representations are associated with a common concept.

25 Claims, 41 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 22

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn D](#)

✓ 10. Document ID: US 6189143 B1

L3: Entry 10 of 18

File: USPT

Feb 13, 2001

US-PAT-NO: 6189143

DOCUMENT-IDENTIFIER: US 6189143 B1

TITLE: Method and system for reducing an intentional program tree represented by high-level computational constructs

DATE-ISSUED: February 13, 2001

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|--------|-------|----------|---------|
| Simonyi; Charles | Medina | WA | | |

US-CL-CURRENT: 717/109; 717/144

ABSTRACT:

A method and system is described for generating executable code for a computer program. A programmer creates an intentional program tree using a syntax-independent editor. The editor allows a programmer to directly manipulate the intentional program tree. The intentional program tree has nodes. Each node represents a high-level computational construct of the computer program. For each node representing a high-level computational construct, the system transforms the node into an implementation of the high-level computational construct using low-level computational constructs. For each node representing a low-level computational construct, the system generates executable code that implements the low-level computational construct. The system further provides that where a high-level computational construct has a plurality of implementations of the high-level computational construct, the system transforms the nodes by selecting one of the implementations and transforms the node in accordance with the selected implementation. The system further provides that the implementation is selected by automatically analyzing semantics of the intentional program tree.

64 Claims, 38 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 35

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Draw. D.](#)

Γ 11. Document ID: US 6154757 A

L3: Entry 11 of 18

File: USPT

Nov 28, 2000

US-PAT-NO: 6154757

DOCUMENT-IDENTIFIER: US 6154757 A

TITLE: Electronic text reading environment enhancement method and apparatus

DATE-ISSUED: November 28, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------|----------------|-------|----------|---------|
| Krause; Philip R. | Upper Marlboro | MD | 20772 | |
| Krause; Thomas W. | Mitchellville | MD | 20721 | |

US-CL-CURRENT: 715/530; 715/532

ABSTRACT:

An apparatus, method and article of manufacture of the present invention provide an enhanced user interface for a computer system that maximizes a reader's ability to rapidly comprehend a text. The invention provides simplified, interactive means for assigning values to parameters associated with the display of text, and for displaying the electronic text in accordance with the parameter values selected. The features of the present invention allow a user to optimize reading speed and comprehension depending on the user's personal characteristics, preferences, and abilities, as well as the characteristics of the text. In addition, the present

invention provides simplified access to related sections of the text being read, as well as secondary reference sources, in a manner that minimizes interference with reading the primary text.

25 Claims, 27 Drawing figures

Exemplary Claim Number: 24

Number of Drawing Sheets: 27

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequencast](#) | [Attachments](#) | [Claims](#) | [KWMC](#) | [Drawn D.](#)

12. Document ID: US 6097888 A

L3: Entry 12 of 18

File: USPT

Aug 1, 2000

US-PAT-NO: 6097888

DOCUMENT-IDENTIFIER: US 6097888 A

TITLE: Method and system for reducing an intentional program tree represented by high-level computational constructs

DATE-ISSUED: August 1, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|--------|-------|----------|---------|
| Simonyi; Charles | Medina | WA | | |

US-CL-CURRENT: 717/144; 715/967, 717/146

ABSTRACT:

A method and system for generating a computer program in the manner that uses no computer programming language syntax. The system represents a computer program as an intentional program tree, which is a high-level program tree that is a syntax-independent representation using high-level computational constructs. The intentional program tree represents a programmer's intent, rather than an implementation of the programmer's intent. The programmer creates an intentional program tree using a syntax-independent editor. The editors allows a programmer to directly

manipulate the intentional program tree. Because the program is stored as an intentional program tree in a syntax-independent manner, the editor allows the program to select in which of a various programming language the computer program is to be displayed. In addition, the system transforms an intentional program tree to a reduced program tree, which is a program tree comprising low-level computational constructs, in a process called reduction. The reduction process replaces expressions of programmer's intents with a representation of one of possible multiple implementations of those intents using low-level computational constructs.

55 Claims, 38 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 35

| | | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|-----|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KMPC | Dra |
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13. Document ID: US 5999182 A

L3: Entry 13 of 18

File: USPT

Dec 7, 1999

US-PAT-NO: 5999182

DOCUMENT-IDENTIFIER: US 5999182 A

TITLE: Computational architecture for reasoning involving extensible graphical representations

DATE-ISSUED: December 7, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------------|-------------|-------|----------|---------|
| Etchemendy; John W. | Menlo Park | CA | | |
| Barwise; K. Jon | Bloomington | IN | | |

US-CL-CURRENT: 715/853; 706/46

ABSTRACT:

A computer architecture supports reasoning tasks involving information represented in graphical form. The architecture supports the creation, storing, display, and editing of a partially ordered set of nodes representing the steps in a reasoning process, as well as representations of information associated with the nodes. Modifications are constrained by rules that support the creation of valid reasoning. In particular, special rules of inheritance place constraints upon what information is available for display and modification at any given point in the reasoning process. The present architecture supports reasoning about any type of graphical representation and about multiple representations within a single reasoning process. In addition, the present architecture supports extensible representations, i.e., representations that may be edited at later points in a proof to extend the range of possible values which may be assigned to their attributes, or to add or delete objects or attributes. The architecture can simultaneously support and integrate the structured reasoning involving both sentential and graphical representations of information. The techniques provided by the invention have application to a wide variety of engineering and scientific practices by improving the processes through which designs and problem solutions are created, assessed, and communicated. It has particular importance and value for complex collaborative projects.

7 Claims, 18 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 12

| | | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|-----|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KMPC | Dra |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|-----|

14. Document ID: US 5911072 A

L3: Entry 14 of 18

File: USPT

Jun 8, 1999

US-PAT-NO: 5911072
DOCUMENT-IDENTIFIER: US 5911072 A

TITLE: Method and system for reducing an intentional program tree represented by high-level computational constructs

DATE-ISSUED: June 8, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|--------|-------|----------|---------|
| Simonyi; Charles | Medina | WA | | |

US-CL-CURRENT: 717/105; 717/113

ABSTRACT:

A method and system for generating a computer program in the manner that uses no computer programming language syntax. The system represents a computer program as an intentional program tree, which is a high-level program tree that is a syntax-independent representation using high-level computational constructs. The intentional program tree represents a programmer's intent, rather than an implementation of the programmer's intent. The programmer creates an intentional program tree using a syntax-independent editor. The editors allows a programmer to directly manipulate the intentional program tree. Because the program is stored as an intentional program tree in a syntax-independent manner, the editor allows the program to select in which of a various programming language the computer program is to be displayed. In addition, the system transforms an intentional program tree to a reduced program tree, which is a program tree comprising low-level computational constructs, in a process called reduction. The reduction process replaces expressions of programmer's intents with a representation of one of possible multiple implementations of those intents using low-level computational constructs.

28 Claims, 38 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 35

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequencing](#) | [View Document](#) | [Claims](#) | [KMC](#) | [Drawn D.](#)

15. Document ID: US 5895474 A

L3: Entry 15 of 18

File: USPT

Apr 20, 1999

US-PAT-NO: 5895474
DOCUMENT-IDENTIFIER: US 5895474 A

TITLE: Interactive, tree structured, graphical visualization aid

DATE-ISSUED: April 20, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|-------|-------|----------|---------|
| Maarek; Yoelle Smadja | Haifa | | | IL |

| | | |
|------------------|-------|----|
| Vortman; Pnina | Haifa | IL |
| Wecker; Alan Jay | Haifa | IL |

US-CL-CURRENT: 715/514; 715/854

ABSTRACT:

An interactive, tree structured, graphical visualization aid enables a user to better understand and interpret underlying structures in collections of digitally stored data elements, such as documents, programs and other data files. The visualization aid responds to user input, which directs the aid to operate in one of at least two modes. In a first mode, the visualization aid displays a graphical tree structure that includes a selected node and all branches of the selected node, including all subordinate nodes and data elements. In this first mode of operation, all data elements or documents branching either directly from the selected node or directly from subordinate nodes are displayed in the tree structure as branching directly from their respective nodes. In a second mode of operation, the visualization aid displays a graphical tree structure that includes a single group of all data elements or documents that branch either directly from the selected node or directly from subordinate nodes, but the selected node and its subordinate nodes are not displayed.

2 Claims, 8 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 8

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Documents](#) | [Claims](#) | [KMC](#) | [Drawn De](#)

16. Document ID: US 5701137 A

L3: Entry 16 of 18

File: USPT

Dec 23, 1997

US-PAT-NO: 5701137

DOCUMENT-IDENTIFIER: US 5701137 A

TITLE: Method for separating a hierarchical tree control into one or more hierarchical child tree controls in a graphical user interface

DATE-ISSUED: December 23, 1997

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------|---------|-------|----------|---------|
| Kiernan; Casey L. | Redmond | WA | | |
| Jancke; Gavin | Redmond | WA | | |

US-CL-CURRENT: 715/853; 715/854

ABSTRACT:

A method for interactive display of a graphical tree structure in a windowing environment. A tree control graphically represents hierarchical data. The user can separate a portion of a tree control at a node and create a new tree control for viewing and editing. Changes to a newly created tree control propagate through to

related tree controls.

24 Claims, 12 Drawing figures
Exemplary Claim Number: 11
Number of Drawing Sheets: 11

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn D.](#)

17. Document ID: US 4912657 A

L3: Entry 17 of 18

File: USPT

Mar 27, 1990

US-PAT-NO: 4912657

DOCUMENT-IDENTIFIER: US 4912657 A

TITLE: Method and systems for generating parametric designs

DATE-ISSUED: March 27, 1990

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------|------------|-------|----------|---------|
| Saxton; Jay R. | Bellingham | WA | | |
| Sodt; Andrew J. | Seattle | WA | | |
| Suslo; Dan J. | Bellingham | WA | | |

US-CL-CURRENT: 715/853; 715/964

ABSTRACT:

Systems and processes in which a master drawing is rectified to produce a design in the form of a drawing or instructions for a computer aided manufacturing process. A modular approach is employed. This allows elements to be combined into, or incorporated in, a more complex design. Each product and element is manifested by a design module which has one or more master drawings in which dimensions and text are replaced by variables, and a specsheets which effects the rectification of the master drawing(s). The specsheets can be employed in an editing mode to establish a design or in a run-time mode. In the latter, an end user simply responds to prompts with appropriate information to produce a final design.

22 Claims, 60 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 57

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn D.](#)

18. Document ID: US 4849880 A

L3: Entry 18 of 18

File: USPT

Jul 18, 1989

US-PAT-NO: 4849880

DOCUMENT-IDENTIFIER: US 4849880 A

TITLE: Virtual machine programming system

DATE-ISSUED: July 18, 1989

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|---------|-------|----------|---------|
| Bhaskar; Kasi S. | Seattle | WA | | |
| Peckol; James K. | Edmonds | WA | | |

US-CL-CURRENT: 717/109; 715/839

ABSTRACT:

A system for programming a computer provides a set of software-based virtual machines each for instructing a computer to carry out a selected operation. Each virtual machine is represented by a virtual front panel displayed on a screen and each virtual front panel graphically displays operator controllable values of input and output parameters utilized by the virtual machine it represents. The system is adapted to synthesize a new virtual machine for instructing the computer to perform a sequence of operations wherein each operation is carried out by the computer according to the instructions of an operator selected one of the existing virtual machines. The system also creates a new virtual front panel for displaying input and output parameters associated with the new virtual machine. The system permits the operator to program the computer by directing synthesis of a hierarchy of virtual machines.

20 Claims, 29 Drawing figures

Exemplary Claim Number: 16,19

Number of Drawing Sheets: 8

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [SEQUENCES](#) | [Cited References](#) | [Claims](#) | [RWC](#) | [Drawn D](#)

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| Terms | Documents |
|---------------------------------------|-----------|
| L2 AND (graphical ADJ representation) | 18 |

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